

REMARKS

Applicant respectfully requests reconsideration of this application in view of the foregoing amendments and following remarks.

Status Of The Claims

Claims 1-83, 85-90, and 92-94 are pending in this Application. Claims 80-83, 85-90, and 92-94 are allowed. Claims 34 and 47 are objected to as being dependent upon a rejected base claim. Claims 1-33, 35-46 and 48-79 are rejected.

By this amendment, claims 1, 11, 21, 22, 35, 48, 49, 64, and 79 are amended. No new matter has been added by this amendment.

Rejections Under 35 U.S.C. 103(a)

Claims 1, 2, 4, 11, 12, 14, 21-23, 25, 35, 36, 38, 48-54, 56, 64-69, 71, and 79 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,703,623 to Hall ("Hall") in view of U.S. Patent No. 5,619,231 to Shouen ("Shouen"), and in further in view of U.S. Patent No. 6,115,028 to Balakrishnan ("Balakrishnan"). Claims 3, 5-10, 13, 15-20, 24, 26-33, 37, 39-46, 55, 57-63, 70, and 72-78 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hall in view of Shouen, and further in view of Balakrishnan, and further in view of U.S. Patent No. 5,146,353 to Isoguchi et al. ("Isoguchi").

Claims 1, 11, 21, 22, 35, 48, 49, 64, and 79 have been amended for further clarification. One of the aspects of the present invention as featured in the amended claims is directed to a coordinate input apparatus for inputting an absolute three-dimensional position in three-dimensional coordinates in a space including said coordinate input apparatus and a host device.

This coordinate input apparatus receives light emitted by a light emission unit of a designation device (a remote controller) by a plurality of sensors, calculates and determines the absolute three-dimensional position of the light emission unit with regard to the coordinate input apparatus based on values corresponding to positions where the light is emitted on the plurality of sensors. Then, the coordinate input apparatus transfers the absolute three-dimensional position to the host device.

According to the claimed invention, since the three-dimensional position where the designation device exists with regard to the coordinate input apparatus is calculated based on a position relationship between a position of the designation device and a position of the coordinate input device, an absolute three-dimensional position of the designation device with regard to the coordinate input apparatus is obtained precisely.

Thus, in the claimed invention, an absolute three-dimensional position in an absolute three-dimensional coordinate system can be detected, rather than relative moving amount and moving direction of the designation device. The claimed invention realizes inputting an absolute three-dimensional position of a designation device by detecting an absolute three-dimensional coordinates based on values corresponding to positions where a light is emitted by the light emission unit on the plurality of sensors.

Hall discloses a handheld cursor control device that senses changes to its own position and orientation by detecting six degrees of freedom (X, Y, Z, yaw, pitch and roll) in three dimensions of the hand held control device. Sensed information including relative moving amount and direction of the hand held cursor control device, instead of absolute moving amount and direction of the hand held cursor control device with regard to an external device, is transmitted

to the external device.

Thus, the arrangement of Hall merely emulates an operation of a mouse with the handheld cursor control device. For example, Hall does NOT calculate absolute three-dimensional position of the hand held cursor control device with regard to the external device as required by amended claim 1, 11, 21, 22, 35, 48, 49, 64, and 79.

Shouen discloses a multi-dimensional input apparatus (a mouse) for inputting a coordinate, rotation angle, coordinate plane degree of each plane in the multi-dimension. However, Shouen does NOT teach or suggest detecting absolute coordinate values in a three-dimensional coordinate as required by amended claims 1, 11, 21, 22, 35, 48, 49, 64, and 79.

The Examiner states that Balakrishnan discloses a mouse being able to input three-dimensional coordinate. This three-dimensional coordinate comprises two coordinates and tilt of the mouse in a plane (a tablet). Furthermore, the Examiner states that Balakrishnan can input an absolute position in a three-dimensional coordinate. As Applicant understands it, however, this absolute position is a position of the mouse on the tablet (two-dimension), rather than an absolute three-dimensional position of a designation means in a space including a coordinate input apparatus and a host device as specifically recited in the amended claims.

Accordingly, none of Hall, Shouen and Balakrishnan, either taken alone or in combination, shows or suggests at least one of the features of the invention as discussed above, i.e., inputting an absolute three-dimensional position of a designation device by detecting an absolute three-dimensional coordinates based on values corresponding to positions where a light is emitted by the light emission unit on the plurality of sensors.

Thus, each of claims 1, 11, 21, 22, 35, 48, 49, 64, and 79 is believed neither anticipated

by nor rendered obvious in view of the cited references (i.e., Hall, Shouen and Balakrishnan) for at least the reasons discussed above.

Reconsideration and withdrawal of the rejections of claims 1, 11, 21, 22, 35, 48, 49, 64, and 79 under 35 U.S.C. §103(a) is respectfully requested.

Applicant has not individually addressed the rejections of the dependent claims because Applicant submits that the independent claims from which they respectively depend are in condition for allowance as set forth above. Applicant however reserves the right to address such rejections of the dependent claims should such be necessary.

Claims 34 and 47 have been objected to as depending from rejected base claims. Applicant respectfully submits that, as the independent claims from which the objected to claims depend are hereby placed in condition for allowance, these claims as pending are thereby also placed in condition for allowance. Withdrawal of the objection is respectfully requested.

Applicant believes that the application is in condition for allowance and such action is respectfully requested.

AUTHORIZATION

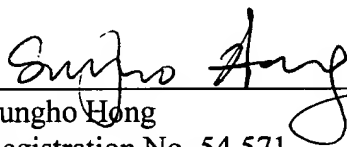
No petitions or additional fees are believed due for this amendment and/or any accompanying submissions. However, to the extent that any additional fees and/or petition is required, including a petition for extension of time, Applicant hereby petitions the Commissioner to grant such petition, and hereby authorizes the Commissioner to charge any additional fees, including any fees which may be required for such petition, or credit any overpayment to Deposit Account No. 13-4500 (Order No. 1232-4573). A DUPLICATE COPY OF THIS SHEET IS ENCLOSED.

An early and favorable examination on the merits is respectfully requested.

Respectfully submitted,
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